

R E M A R K S

Applicants have received and carefully reviewed the Office Action of the Examiner mailed April 8, 2008. Currently, claims 1-42 are pending in the applications. Claims 30-39 have been withdrawn subsequent an Examiner induced restriction requirement. Claims 1-29, and 40-42 have been. With this paper, claims 1, 4, 15-20, 23, and 25 have been amended. Support for the amendments may be found in the specification, claims and drawings as filed. No new matter has been added. Favorable consideration of the following remarks is respectfully requested.

Election/Restriction

The Office Action stated that 2 distinct species had been identified. Election of species was requested. Applicants elect species I without traverse. Species I corresponds to claims 1-29 and 40-42. The Listing of Claims reflects withdrawal of non-elected claims 30-39. Examination of the above-identified claims is respectfully requested.

Double Patenting

Claims 1, 3-4, 7-9, 15, and 17-18 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 13, 17-18, 23-25, 29, and 32 of copending Application No. 10/915,577. Applicants do not concede the correctness of the rejection, however when the claims are otherwise indicated as allowable, a Terminal Disclaimer will be filed.

Claim Objections

Claim 1 has been objected to because the last line ends in "and" and there is a period missing at the end of the claim.

Appropriate corrections have been made. Withdrawal of the objection is respectfully requested.

Claim Rejections Under 35 U.S.C. §112

Claims 15 and 16 have been rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically the Examiner asserts it is unclear what is meant by a "spark-plug-like" housing or package. The claims have been amended to remove the phrase "spark-plug-like." Withdrawal of the rejection is respectfully requested.

Claim Rejections Under 35 U.S.C. §102

Claims 1-3, 5, 17-20, 25-27, 29, 40, and 42 have been rejected under 35 U.S.C. §102(b) as being anticipated by Griffin et al. (US 5,085,499). Applicants respectfully traverse the rejection.

Independent claim 1, as amended, recites:

1. (currently amended) A sensor system comprising:
 - a first electrode;
 - a second electrode proximate to the first electrode to form a gap between the first and second electrodes;
 - a light waveguide having a first end proximate to the gap; [[and]]
 - a filter proximate to a second end of the light waveguide; and
 - a soot sensing electrode susceptible to soot build-up.

Griffin et al. do not appear to teach such a device. Specifically, Griffin et al. do not appear to teach a filter proximate to a second end of the light waveguide. Griffin et al. also do not appear to teach a soot sensing electrode susceptible to soot build-up. MPEP 2131 states, "A claim is

anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). ... "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

In formulating the rejection, the Examiner refers to Figure 7 of Griffin et al. to provide support for the rejection. After careful review of Figure 7 and the text that describes Figure 7, Applicants cannot find where Griffin et al. teach a filter proximate to a second end of the light waveguide. Griffin et al. appear to teach a spark probe wherein an optical fiber transmits light from the probe to a spectrometer. Griffin et al. does not appear to teach or suggest a filter let alone a filter proximate to a second end of the light waveguide. Therefore, Griffin et al. do not appear to teach or suggest a filter proximate to a second end of the light waveguide.

Further, Griffin et al. do not appear to teach or suggest a soot sensing electrode. Griffin et al. do not appear to disclose soot, a soot sensing electrode, or soot build-up. In formulating the rejection for original claim 4, part of which has been incorporated into independent claim 1, the Examiner asserts:

Regarding claim 4, the reference Griffin discloses the claimed invention except for specifically disclosing the first electrode is susceptible to soot build-up. Griffin discloses that in operation a function generator is set to provide a periodic wave form to trigger the trigger module. The trigger module generates a periodic high voltage signal over the path to a pair of spark electrodes in the spark probe. This results in continuous series of sparks in the spark gap at a frequency (see column 12, lines 48-54). It is interpreted by the examiner that the spark that

is created, prevents build up on the electrode that the may be kept clean.

It appears the Examiner has interpreted the operation of the spark electrode of Griffin et al. as teaching a soot sensing electrode. Griffin et al. appear to teach the trigger module generates a spark to provide light to analyze the sample. Griffin et al. do not appear to teach or suggest that soot or soot build-up is a problem that occurs or needs to be addressed. Further, Griffin et al. do not teach an electrode capable of sensing soot. The trigger module of Griffin et al. appears to operate on a set time interval and not in response to any input from the probe. Griffin et al. cannot be considered as teaching or suggesting a soot sensing electrode susceptible to soot build-up.

Further, if the Examiner is considering the specific limitations recited in the claims to be inherent in Griffin et al., Applicants submit that there is no basis for such an interpretation. MPEP 2112 IV. states:

The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) (reversed rejection because inherency was based on what would result due to optimization of conditions, not what was necessarily present in the prior art); *In re Oelrich*, 666 F.2d 578, 581-82, 212 USPQ 323, 326 (CCPA 1981). "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is **necessarily present** in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.' " *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999)...

"In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original).

(Emphasis added). Applicants submit that the claimed limitations, in particular a soot sensing electrode susceptible to soot build-up, are not necessarily present in Griffin et al. It appears the Examiner is asserting that the claimed limitation could occur in the system of Griffin et al., which is not a proper basis for rejection.

Thus, Griffin et al. cannot be considered as anticipating the claimed device. Further, there appears to be no motivation, suggestion, or other reason for one of ordinary skill in the art to modify Griffin et al. to arrive at the device as claimed. Reconsideration and withdrawal of the rejection are respectfully requested. For similar reasons and others, Applicants submit that claims 2-3, 5 and 40 are also in condition for allowance as they depend from claim 1 and add significant limitations to further distinguish them from the prior art.

Independent claim 17, as amended, recites:

17. (currently amended) A sensor system comprising:

a first electrode;

a second electrode proximate to the first electrode to form a first gap between the first and second electrodes;

a light waveguide having a first end optically connected to the gap and having a second end; [[and]]

a spectrometer optically connected to the second end of the light waveguide;

a soot sensing electrode susceptible to soot build-up;

wherein the soot sensing electrode is kept clean by a discharge plasma of the gap or by a second gap.

Griffin et al. do not appear to teach such a device. For at least the reasons discussed above with respect to claim 1, Griffin et al do not appear to teach or suggest a soot sensing electrode susceptible to soot build-up. Griffin et al further do not teach or suggest how such an electrode may be kept clean.

Thus, Griffin et al. cannot be considered as anticipating the claimed device. Further, there appears to be no motivation, suggestion, or other reason for one of ordinary skill in the art to modify Griffin et al. to arrive at the device as claimed. Reconsideration and withdrawal of the rejection are respectfully requested. For similar reasons and others, Applicants submit that claims 18-20 and 42 are also in condition for allowance as they depend from claim 17 and add significant limitations to further distinguish them from the prior art.

Independent claim 25, as amended, recites:

25. (currently amended) A means for sensing comprising:

means for providing an electrical discharge;
means for coupling a fluid to a vicinity of the means for providing an electrical discharge; [[and]]
means for analyzing light optically coupled to the means for providing an electrical discharge; and
means for sensing soot build-up.

Griffin et al. do not appear to teach such a device. For at least the reasons discussed above with respect to claim 1, Griffin et al do not appear to teach or suggest a means for sensing soot build-up. Thus, Griffin et al. cannot be considered as anticipating the claimed device. Further, there appears to be no motivation, suggestion, or other reason for one of ordinary skill in the art to modify Griffin et al. to arrive at the device as claimed. Reconsideration and withdrawal of the rejection are respectfully requested. For similar reasons and others, Applicants submit that claims 26-27 and 29 are also in condition for allowance as they depend from claim 25 and add

significant limitations to further distinguish them from the prior art.

Claim Rejections Under 35 U.S.C. §103

Claims 4, 6, 28, and 41 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Griffin et al. Applicants respectfully traverse the rejection.

For at least the reasons set forth above, Griffin et al. do not appear to teach each and every element of independent claims 1 and 25 from which the above claims depend. The above referenced dependent claims add significant limitations to further distinguish them from the prior art. Further, there appears to be no motivation, suggestion, or other reason for one of ordinary skill in the art to modify Griffin et al. to achieve the device as claimed. Therefore, claims 4, 6, 28, and 41 are believed to be patentable over Griffin et al. Reconsideration and withdrawal of the rejection are respectfully requested.

Claims 7-16 and 24 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Griffin et al. in view of Kimura et al. (US 5,333,487) Applicants respectfully traverse the rejection.

For at least the reasons set forth above, Griffin et al. do not appear to teach each and every element of independent claims 1 and 17 from which the above claims depend. Kimura et al. do not appear to teach what Griffin et al. lack. Thus, even if one were to combine Griffin et al. and Kimura et al., one would not arrive at the device as claimed. Furthermore, there is no motivation, suggestion, or other reason for one of ordinary skill in the art to modify Griffin et al. or Kimura et al. to achieve the device as claimed. Therefore, claims 7-16 and 24 are believed to be patentable over Griffin et al. and Kimura et

al. Reconsideration and withdrawal of the rejection are respectfully requested.

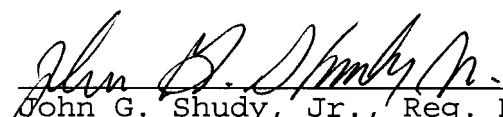
Claims 21-23 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Griffin et al. in view of Braman et al. (US 3,612,686) Applicants respectfully traverse the rejection.

For at least the reasons set forth above, Griffin et al. do not appear to teach each and every element of independent claim 17 from which the above claims depend. Braman et al. do not appear to teach what Griffin et al. lack. Thus, even if one were to combine Griffin et al. and Braman et al., one would not arrive at the device as claimed. Furthermore, there is no motivation, suggestion, or other reason for one of ordinary skill in the art to modify Griffin et al. or Braman et al. to achieve the device as claimed. Therefore, claims 21-23 are believed to be patentable over Griffin et al. and Braman et al. Reconsideration and withdrawal of the rejection are respectfully requested.

Reexamination and reconsideration are respectfully requested. It is respectfully submitted that all pending claims should now be in condition for allowance. If a telephone conference might be of assistance, please contact the undersigned attorney at (612) 677-9050.

Respectfully Submitted:

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